

AMENDMENTS TO THE CLAIMS

This listing of claims will replace all prior versions, and listing, of claims in the application:

Listing of Claims:

1. (Currently amended) An image sensor having a plurality of pixels, each pixel comprising:

a photocell ~~for receiving~~ which receives light and ~~generates~~[[ing]] an analog signal corresponding to a quantity of the received light;

a latch type comparator ~~for comparing~~ which compares the analog signal of the photocell and a ~~reference signal~~ an analog signal of a photocell of an adjacent pixel and ~~generates~~[[ing]] a digital signal having a value of the compared result; and

a switch ~~for outputting~~ which outputs the digital signal of the latch type comparator under the control of the pixel select signal.
2. (Original) The image sensor as claimed in claim 1, wherein the digital signal is a digital signal having a 1-bit structure.
3. (Canceled) The image sensor as claimed in claim 1, wherein the reference signal is an analog signal of a photocell of an adjacent pixel.
4. (Original) The image sensor as claimed in claim 1, wherein the reference signal is a reference voltage.

5. (Original) The image sensor as claimed in claim 1, wherein the photocell is a photo diode that generates a photocurrent corresponding to the received quantity of light.

6. (Currently amended) The image sensor as claimed in claim 1, wherein the latch type comparator ~~is a latch type comparator which~~ outputs a first signal when the analog signal of the photocell is greater than the reference signal and outputs a second signal when the analog signal of the photocell is less than the reference signal.

7. (Currently amended) An image sensor comprising:

a) a plurality of pixels, each having

a first photocell ~~for receiving~~ which receives light and generates~~es~~[[ing]] a first analog signal corresponding to a quantity of the received light,

a latch type comparator ~~for comparing~~ which compares the analog signal of the first photocell and a ~~reference signal~~ an analog signal of a photocell of an adjacent pixel and generates~~es~~[[ing]] a 1-bit structured digital signal having a value of the compared result, and

a switch ~~for outputting~~ which outputs the 1-bit structured digital signal of the latch type comparator; and

b) at least one second photocell ~~for generating~~ which generates a second analog signal corresponding to the received quantity of light to provide a shutter control information.

8. (Canceled) The image sensor as claimed in claim 7, wherein the digital signal is a digital signal having a 1-bit structure.

9. (Canceled) The image sensor as claimed in claim 7, wherein the reference signal is an analog signal of an adjacent photocell of an adjacent pixel.

10. (Original) The image sensor as claimed in claim 7, wherein the reference signal is a reference voltage.

11. (Original) The image sensor as claimed in claim 7, wherein at least one of the first and second photocells comprises a photo diode and a transistor, the photodiode generating a photocurrent corresponding to the received quantity of light.

12. (Currently amended) The image sensor as claimed in claim 7, wherein the latch type ~~comparator is a latch type comparator which~~ outputs a first signal when the analog signal of any one of the first and second photocells is greater than the reference signal and outputs a second signal when the analog signal of any one of the first and second photocells is less than the reference signal.

13. (Original) The image sensor as claimed in claim 7, wherein the second photocell is arranged inside each of the plurality of pixels.

14. (Original) The image sensor as claimed in claim 7, wherein the second photocell is arranged outside each of the plurality of pixels.

15. (Currently amended) An optical pointing system comprising:

- a) a plurality of pixels, each having
a photocell ~~for receiving~~ which receives light and ~~generates~~[[ing]] an analog signal
corresponding to a quantity of the received light,[[and]]
a latch type comparator ~~for comparing~~ which compares the analog signal of the
photocell and a ~~reference signal~~ an analog signal of a photocell of an adjacent pixel and
~~generates~~[[ing]] a digital signal having a value of the compared result, and
a switch which outputs the digital signal of the latch type comparator under the control
of the pixel select signal;
- b) an image processor ~~for calculating~~ which calculates a movement value using the
digital signals outputted from the plurality of pixels and ~~generates~~[[ing]] a pixel select signal and
a shutter control information signal; and
- c) a shutter control circuit ~~for generating~~ which generates a shutter control signal
corresponding to the shutter control information signal of the image processor.

16. (Canceled) The optical pointing system as claimed in claim 15, wherein each of the plurality of pixels further comprises a switch for outputting the digital signal of the comparator under the control of the pixel select signal.

17. (Currently amended) An optical pointing system comprising:

- a) a plurality of pixels, each having
a first photocell ~~for generating~~ which generates a first analog signal corresponding to a
received quantity of light,[[and]]

a latch type comparator ~~for comparing~~ which compares the first analog signal of the first photocell and a ~~reference signal~~ an analog signal of a photocell of an adjacent pixel and generates~~[[ing]]~~ a 1-bit structured digital signal having a value of the compared result, and
a switch which outputs the 1-bit structured digital signal of the latch type comparator
under the control of the pixel select signal;

b) at least one second photocell ~~for generating~~ which generates a second analog signal corresponding to the received quantity of light;

c) an image processor ~~for calculating~~ which calculates a movement value using the 1-bit structured digital signals outputted from the latch type comparator and generates~~[[ing]]~~ a pixel select signal; and

d) a shutter control circuit ~~for generating~~ which generates a shutter control signal using the second analog signal outputted from the second photocell.

18. (Canceled) The optical pointing system as claimed in claim 17, wherein each of the plurality of pixels further comprises a switch for transmitting the digital signal outputted from the comparator in response to the pixel select signal.

19. (Original) The optical pointing system as claimed in claim 18, wherein the second photocell is arranged inside each of the plurality of pixels.